

CLAIMS

What is claimed is:

1 1. A method, comprising:
 2 allocating a plurality of registers;
 3 enabling execution of computer instructions concurrently
 4 by using the plurality of registers; and
 5 tracking and reducing data dependencies in the computer
 6 instructions by correlating busy condition of a computer
 7 instruction to each register.

1 2. The method of claim 1, wherein said enabling
 2 includes enabling execution of the computer instructions out
 3 of order.

1 3. The method of claim 1, further comprising:
 2 allocating a plurality of register files, each register
 3 file including the plurality of registers, the plurality
 4 register files enabling keeping copies of register contents.

1 4. The method of claim 3, further comprising:
 2 maintaining a select register that tracks a currently
 3 used register file.

1 5. The method of claim 3, further comprising:
2 maintaining a free file list that tracks currently
3 available register files.

1 6. The method of claim 1, wherein said allocating,
2 enabling, and tracking includes substantially reducing
3 computer instruction stalls due to data dependencies.

1 7. The method of claim 1, wherein said correlating
2 busy condition of a computer instruction to each register
3 includes providing each register with a corresponding
4 scoreboard bit.

1 8. A method, comprising:
2 allocating a plurality of register files if there are
3 any pending writes in a currently used register file, each
4 register file including a plurality of registers;
5 maintaining a select register that tracks the currently
6 used register file;
7 enabling execution of computer instructions concurrently
8 by using the plurality of register files; and
9 tracking and reducing data dependencies in the computer
10 instructions by correlating busy condition of a computer
11 instruction to each register.

1 9. The method of claim 8, further comprising:
2 maintaining a free file list that tracks currently
3 available register files.

1 10. The method of claim 8, wherein said allocating,
2 enabling, and tracking includes substantially reducing
3 computer instruction stalls due to data dependencies.

1 11. A computer readable medium containing executable
2 instructions which, when executed in a processing system,
3 causes the system to perform concurrent execution of computer
4 instructions, comprising:
5 allocating a plurality of registers;
6 enabling execution of computer instructions concurrently
7 by using the plurality of registers; and
8 tracking and reducing data dependencies in the computer
9 instructions by correlating busy condition of a computer
10 instruction to each register.

1 12. The medium of claim 11, wherein said enabling
2 includes enabling execution of the computer instructions out
3 of order.

1 13. The medium of claim 11, further comprising:
2 allocating a plurality of register files, each
3 register file including the plurality of registers, the
4 plurality register files enabling keeping copies of
5 register contents.

1 14. A system, comprising:
2 a plurality of register files, each register file
3 comprising:
4 a plurality of predicate registers to enable
5 execution of computer instructions concurrently and out
6 of order; and
7 a plurality of scoreboard registers to track data
8 dependencies among the computer instructions.

1 15. The system of claim 14, further comprising:
2 a select register to select a current register file from
3 the plurality of register files.

1 16. The system of claim 15, wherein the select register
2 includes a pointer.

1 17. The system of claim 14, further comprising:
2 a free file list to maintain a list of available
3 register files.

1 19. The system of claim 17, wherein the free file list
2 includes a stack.